Sound Barriers

Highly Absorptive Noishield® Barriers Maximize Noise Reduction

- Galvanized Steel or Aluminum
- Free-Draining
- Light Weight
- Easily Installed
- Sound Absorptive
- Weather-Tested Finishes
- Relocatable
- Freestanding or Add-on Cladding
- Horizontal or Vertical Installation

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Industrial Acoustics Company... Making the World a Quieter Place

NOISHIELD® Sound Barriers Prot

Air Conditioners • Pumps • Compressors • Fans • Transformers • Customer

Freestanding Barriers

Noishield Types: FS and SFS Barriers – sound absorptive on one and two sides respectively – optimize sound transmission loss and sound absorbing properties in a durable and attractive wall system in harmony with the community.

- Excellent low-frequency absorption for heavy equipment
- Laboratory-rated sound absorption on one or both sides
- Low weight, rugged construction -- ideal for wall or roof mounting
- 5-in.-thick (127mm) modular metal module system in steel or aluminum
- Abuse resistant dual-coated, galvannealed steel or aluminum construction
- Withstands wind velocities of 110 mph (177km/hr) -- designs for specific wind loads are available
- Readily relocated in the event of expansion or other projects

Sound Absorptive Treatment for New Construction and Retrofit Applications

Noishield Type C Cladding Modules – sound absorptive to control reflections from acoustically hard barriers.

- Apply to new or existing wood, concrete, or steel barriers to reduce reflected noise levels in the community
- Retrofit existing barriers to eliminate or mitigate noise complaints
- Low weight rugged construction -- ideal for retrofit applications
- Laboratory rated sound absorption coefficients
- 2 ½ in. (64mm) thick metal module system
- Abuse resistant galvannealed steel or aluminum construction
- Individual modules readily manufactured and replaced if damaged

Weather-Resistance Noishield Sound Barrier Modules are constructed with solid top surfaces to minimize water infusion and perforated bottom surfaces to allow any entrapped water to escape. Infill is non-hygroscopic - water does not "wick" into the modules. Hence, traditional polymer fill protection is neither required or desirable due to adverse effects on sound absorbing characteristics.

Ground Mount/Roof Mount/Structure Mount

Noishield Barriers are engineered from the foundation up for structural and acoustical integrity and economical installation. Low weight modules stack between posts to achieve required wall heights. Noishield barriers can be installed with horizontal or vertical reveals to satisfy aesthetic and architectural considerations.

Finishes Noishield Barriers are finished with a tough, thermosetting, polyester powder coating which is not damaged by the harsh cleaning chemicals used to remove spray paint graffiti. A wide variety of standard colors allow complementary decorative schemes and attractive designs to reduce apparent wall height as perceived by the community.

- Tested for accelerated weathering per ASTM G 23 for 2,400 hours with chalking not less than No. 8 rating (ASTM D 659) and color changes less than 5 NBS units (ASTM D 2244).

- Salt spray tested for checking, blistering, loss of adhesion, or evidence of corrosion per ASTM B 117 for more than 4,000 hours without coating failure.

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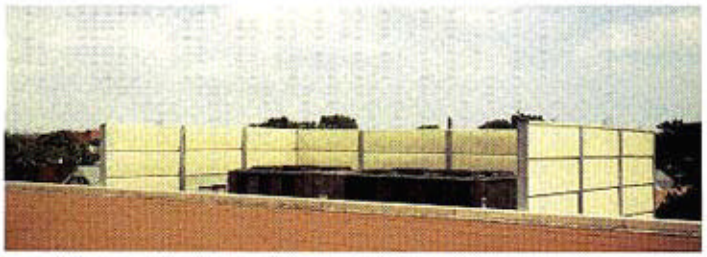
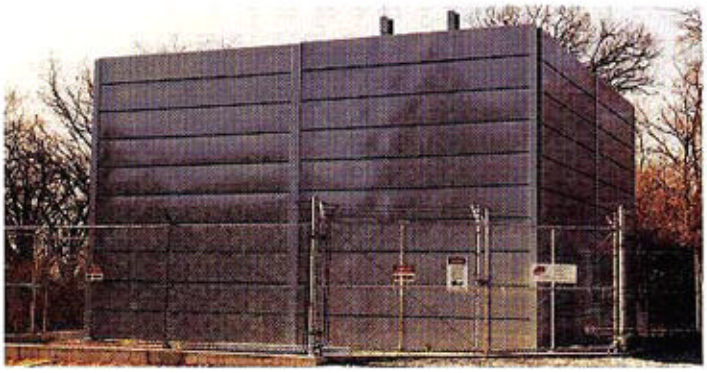
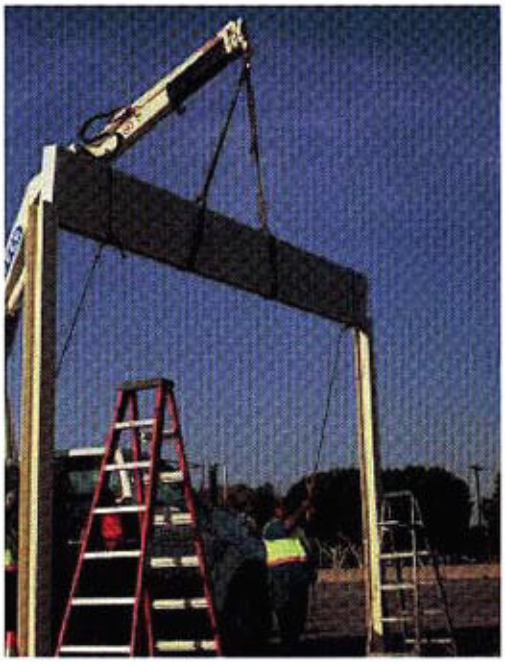
Drive Thru's • Salvage Yards • Condensers • Car Washes • Traffic-Rail-Aircraft







Acoustic Performance

Barriers are rated with sound transmission loss values fully compatible with typical barrier performance requirements.

All Barriers incorporate sound absorbing materials to prevent noise reflections that degrade sound barrier performance. Type C modules are used to clad new or existing non-absorbing barriers while Type FS and SFS are freestanding walls which combine sound transmission loss (use for 125 Hz insertion loss up to 10 dB) and high sound absorption ratings.

*Freestanding Type FSt is used for applications requiring 125 Hz insertion loss between 10 and 14 dB.

1/3 Octave Band Center Frequency, Hz	125	250	500	1K	2K	4K	8K	
SOUND TRANSMISSION LOSS DATA, dB								**STC**
FS/S and SFS/S	21	34	40	33	32	26	37	30
FSt/S	24	38	41	33	35	29	34	33
FS/A and SFS/A	21	32	37	30	37	28	30	31
All data in accordance with ASTM E90 and E 413								
SOUND ABSORPTION COEFFICIENTS								**NRC**
FS/S, FS/A and FSt/S	1.12	1.12	1.10	1.01	0.89	0.76	0.57	1.05
SFS/S and SFS/A	0.49	1.04	1.14	1.05	0.96	0.95	0.87	1.05
C/S and C/A	0.30	1.05	1.07	1.01	0.96	0.88	0.78	1.00
C12/S and C12/A	0.48	1.08	1.10	0.99	0.92	0.83	0.78	1.00
C38/S and C38/A	0.68	1.19	1.10	1.03	0.90	0.81	0.76	1.05

All data in accordance with ISO Standard 354, ASTM C 423 and E 413 with 120 ft² (11.15m²) test sample in 10,000 ft³ (262m³) reverberation room. Type A mounting. Coefficients greater than 1.0 result from edge diffraction effects. Do not use sound absorption values greater than 0.95.

Configuration		TYPE FS Thickness 5 in. 127 mm	TYPE SFS Thickness 5 in. 127 mm	TYPE C Thickness 2.5 in. 64 mm	TYPE C12 Thickness 3 in. 76 mm	TYPE C38 Thickness 4 in. 102 mm
Weight lb/ft² (kg/m²)	Steel	FS/S – 6.5 (31.7) FSt/S* – 8.6 (42.0)	SFS/S – 9.9 (48.3)	C/S – 2.0 (9.8)	C12/S – 2.3 (11.2)	C38/S – 2.8 (13.7)
	Aluminum	FS/A – 4.5 (22.0)	SFS/A – 5.2 (25.4)	C/A –1.1 (5.4)	C12/A –1.4 (6.8)	C38/A –1.9 (9.3)
APPLICATION		Freestanding alongside noisy equipment	Freestanding between multiple noise sources	Apply to new or retrofit existing metal, wood, brick, concrete, stone or other noise-reflecting walls. Select Types C12 and C38 for enhanced 125 Hz sound absorption.		

Specifications
Noishield® Sound Barriers FS/S Module

1.0 GENERAL

1.1 Sound Barrier Modules shall be manufactured and installed with an acoustically absorptive surface having guaranteed sound absorptive properties facing the predominant noise source. The barrier shall be constructed of vertical posts and sound absorptive polyester powder coated metallic modules stacked to achieve the required wall heights. The pre-approved barrier system shall be NOISHIELD modules as manufactured by Industrial Acoustics Company, 1160 Commerce Ave. Bronx, New York 10462-5599.

1.2 Pre-bid submittals and approval shall include sample structural calculations and wall design drawings; current test data illustrating compliance with the requirements of the acoustical and durability specifications for modules made on production line; proof of adequate manufacturing and financial capability consistent with project requirements; and a sample module made on production tooling.

2.0 DESIGN

2.1 The barrier shall be designed in accordance with the requirements of the latest edition of the AASHTO Guide Specification for the Structural Design of Sound Barriers.

2.2 Posts shall be spaced at 16 ft (4877mm) on center for steel posts, (plus concrete web thickness for concrete posts).

2.3 Ground Mounted Barriers

2.3.1 Barrier modules shall not weigh more than 7.5 lb/ft^2 (36.7 kg/m^2) and shall be fabricated of metal.

2.4 Color, Module Patterns, and Graffiti Removal

2.4.1 Modules shall have a consistent color from module to module. A sample of each color to be supplied shall be submitted for approval prior to the start of manufacturing.

2.4.2 Panels shall be stacked with joints aligned horizontally or joints may be uniformly stepped where the top or bottom of the wall changes elevations. Barrier module color patterns shall be shown on shop drawings (using a legend keyed to color numbers).

2.4.3 Removal of graffiti shall be accomplished with soap and water, Turpentine or Varsol, without damage to the module or module color coating.

2.5 Acoustical Characteristics

2.5.1 The barrier shall incorporate absorptive sound materials to prevent reverberation of noise between walls and noise source, and noise reflections to noise sensitive areas of the community.

2.5.2 The surface of the wall facing the predominant source of noise shall have a minimum sound absorption coefficient of 0.95 at each of the 1/3 octave band center frequencies of 125, 250, 500 and 1000 Hz.

2.5.3 The Sound Transmission Loss of the wall modules shall be a minimum of 20 dB at each of the 1/3 octave band center frequencies of 125, 250, 500, 1000, 2000 and 4000 Hz.

3.0 MATERIALS

3.1 Modules shall be constructed of galvannealed steel sheets (aluminum is optional) manufactured in accordance with the requirements of ASTM A 924 coated to ASTM A 653 specifications minimum 14 gauge solid side and 20 gauge perforated side. Modules shall be non-welded, free draining, and free of pockets or cavities in which water may collect. Modules shall be coated in the factory with a polyester powder coating applied through the use of an electrostatic charge, and thermally bonded to the surface of the metal face sheets.

3.2 Acoustic fill material shall be fiberglass, non-corrosive, resistant to attack by fungus, fire-resistant, vermin proof, and non-hygroscopic. Fill material shall be free draining, self supporting and shall retain physical and sound absorptive characteristics after long term exposure to the elements.

3.3 Posts shall be galvanized steel meeting the requirements of ASTM A 36, ASTM A 572 Grade 50 or ASTM A 588 Grade 50 weathering steel. Color coating of posts shall be as required by the owner/architect.

3.4 Anchor bolts shall be ASTM A 307 or approved equal, galvanized to ASTM A 153. Rebar in foundations shall be grade 60. Concrete in foundations shall have a compressive strength exceeding 3,000 psi at 28 days or as required by the approved design.

3.5 Bearing blocks shall be EPDM, neoprene, or rubber, 60 durometer.

3.6 Material Testing and Certification

3.6.1 Acoustical testing

3.6.1.1 Certified test reports shall be submitted to demonstrate compliance with the Sound Transmission Loss and Sound Absorption Coefficients specified. Tests shall have been conducted in a laboratory accredited by the National Voluntary Laboratory Accreditation Program (NVLAP), witnessed and certified by an independent acoustical consultant.

3.6.1.2 Sound Absorption Coefficient Tests shall be performed in accordance with ASTM C 423.

3.6.1.3 Transmission Loss Tests shall be performed in accordance with ASTM E 90 and ASTM E 413.

3.6.2 Module Testing

3.6.2.1 Modules shall be tested for accelerated weathering in accordance with ASTM G 23 or G 26 in a NVLAP certified independent test laboratory. After 2,400 hours of testing, module samples shall not exhibit chalking less than No. 8 per ASTM D 4214 or color change greater than 5 NBS units per ASTM D 2244.

3.6.2.2 Fire resistance tests shall be performed on non-metallic materials in accordance with ASTM E 84. All materials shall have a Class A fire rating with flame spread not greater than 25.

3.6.2.3 Modules shall be tested for corrosion resistance in accordance with ASTM B 117 in a NVLAP certified independent test laboratory. After 2,400 hours of exposure the coating system shall not fail due to blistering, loss of adhesion, or corrosion along the score lines, or other defects.

All designs and specifications subject to change without notice. Metric dimensions nominal.
Request CSI format specifications on disk or hard copy for Types FS/S, FS/A, FSt/S, SFS/S, SFS/A and C.

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